

present war, and gives a detailed description of the country and its geographical character, as well as of its inhabitants, from an ethnographical as well as a social point of view. The natural resources and military power of Afghanistan are described, and particular attention has been paid to an account of the communication between India and Afghanistan, the lines of operation, and the numerous mountain passes. There are several illustrations and an excellent map. It is published by Hartleben, of Vienna.

In a recent voyage from Melbourne to the Fiji Islands, the steamer *Ariel* called at Lord Howe Island, where twenty-five people in all were found. The island is mountainous, of volcanic origin, but well-wooded, about five miles long, and from one and a half to two miles broad, and is situated some 400 miles east of Sydney. The communication of the inhabitants with the outer world is nowadays very uncertain, as whalers but rarely visit them.

THE MUSICAL ASSOCIATION¹

THE question, In what way does science enter into the subject of music? is one that by no means admits of an easy answer. If we were to put it to various persons interested in music in different ways we should find their opinions most vague and contradictory. A university scholar, or a physical lecturer, would make the science of music consist entirely in the doctrines of acoustics; while, on the other hand, we should find some of the most eminent musical professors telling us that these had nothing to do with music at all, but that science meant the study and application of the rules of musical composition. Or possibly it might even be held that a skilful manipulation of the violin, or an appropriate management of the voice in singing, or an intelligent phrasing of pianoforte passages, or other refinements of execution, constituted all the science that musicians need aspire to.

A quarter of a century ago such a question would have excited no interest. People in general were satisfied to take the art as they practically found it, and troubled themselves but little as to the principles on which it was based. But the march of knowledge has changed the aspect of the matter. Modern philosophical investigation has included music in the universality of its aims, and the musician, however conservative, must submit to a searching inquiry as to the real nature of the stuff in which he deals.

The great work of Helmholtz, published in 1863, gave the first real stimulus to scientific musical inquiry; and although many years passed before it became much known in this country it at length aroused attention, and some of the most intelligent students of the art began to see that there was really something to be inquired into—the first step towards accurate knowledge of any kind. They observed the beneficial operation of the learned societies, where papers on the subjects they embraced were brought forward; and the idea occurred to them that an association of a similar character for music would not only enable the scientific questions connected with it to be publicly discussed, but might also be made conducive to the welfare of the art in a practical point of view. The idea was mentioned to one of the most eminent men of science (now president of the Royal Society), who, warmly approving it, issued the following circular:—

“50, Grosvenor Place, April 8, 1874

“DEAR SIR,—It has been suggested by several leading persons interested both in the theory and practice of music, that the

formation of a society similar in the main features of its organisation to existing learned societies would be a great public benefit. Such a musical society might comprise among its members the foremost musicians, theoretical as well as practical, of the day, the principal patrons of art, and also those scientific men whose researches have been directed to the science of acoustics and to kindred inquiries. Its periodical meetings might be devoted partly to the reading of papers upon the history, the principles, and the criticism of music, partly to the illustration of such papers by actual performance, and partly to the exhibition and discussion of experiments relating to theory and construction of musical instruments, or to the principles and combinations of musical sounds.

“With a view to ascertain the opinions of persons interested in these subjects, and to attempt a more precise definition of the objects and constitution of such a society, it is proposed to hold a meeting here, at which your presence is requested on Thursday, April 16, at 2.30 P.M.

“I am, dear sir, yours faithfully,

“(Signed) W. SPOTTISWOODE”

This led to the formation of the Association whose proceedings are mentioned at the head of this article. The rules were judiciously framed, so as to avoid the rocks on which former musical societies had been shipwrecked; and the society has now gone successfully through four sessions. We learn from the report just issued, at the commencement of the fifth year, that the finances are prosperous, that the meetings are well attended, that the officers are zealous and efficient, and that a series of good papers are forthcoming for the future; from all which it may be fairly inferred that the institution has taken a permanent position.

The character of the society is, of course, best displayed by the contents of its *Transactions*. We cannot pretend to review the thirty-six papers (some of them very elaborate) contained in the four volumes before us; it will be an easier course to indicate briefly, in the first instance, what are the “subjects connected with the art and science of music” which more especially deserve “investigation and discussion,” and then to see how far the papers actually presented to the Association have fulfilled the object aimed at in its title.

Giving precedence to science, one may conceive that the “Principles and Phenomena of Acoustics” would claim attention. It is true, as has already been hinted, that some eminent practical musicians repudiate the relevancy of these inquiries, and discourage their study, on the ground that a knowledge of acoustics is unnecessary to the practical musician, whether composer or performer.²

But fortunately the general spread of education sufficiently disposes of arguments of this kind. There are, and no doubt always will be, persons who are satisfied with the minimum amount of knowledge to enable them to earn their daily bread, but it is to be hoped the number is decreasing every day. A man who lives by an art will, if his mind be properly constituted, be in no wise reluctant to learn all he can about it, even though the knowledge may not be immediately convertible into money. Musicians must, in spite of the disparaging opinion of some of their leaders, be treated as intelligent beings, who have minds capable of enlightenment and instruction, and surely there is nothing unreasonable in assuming that the philosophical principles on which their art depends must present some interest to them, if laid before them in an intelligible form. The doctrine that such knowledge should be confined to cultivated amateurs, and forbidden to professional musicians, is simply a libel on the intelligence of those to whom we owe enjoyment of so high an order. If, then, these principles are to be studied, the science of acoustics must necessarily form the basis of the study. The splendid

¹ Proceedings of the Musical Association for the Investigation and Discussion of Subjects connected with the Art and Science of Music. Vols. i. to iv. First Session, 1874-5; Second Session, 1875-6; Third Session, 1876-7; Fourth Session, 1877-8.

² It is a remarkable example of this view that in a new elaborate and voluminous English “Dictionary of Music,” now in course of publication, the word *Acoustics* finds no place.

investigations of Helmholtz as to the nature of musical sounds and musical sensations form a fund of knowledge of the most interesting and instructive kind, and illustration and discussion of such topics would be by no means out of place before the society. We believe that the great fundamental fact of the compound nature of musical sounds, which now has become as firmly established as any physical fact can be, is hardly yet understood, or its great significance appreciated by the great mass of the persons who have to do with its effects every day of their lives.

It happens, however (no doubt for good and sufficient reasons), that the more abstract principles of acoustics have received but little attention in the society. We only notice three papers which come within this category, and these on quite subsidiary points, namely, "On our Perception of the Direction of a Source of Sound," by Lord Rayleigh; "On the Sensitiveness of the Ear to Pitch and Change of Pitch," by Mr. A. J. Ellis; and "On the Musical Inventions and Discoveries of the late Sir C. Wheatstone," by Prof. W. G. Adams.

But the science of acoustics is a very different thing from the theory of music. There is much misunderstanding on this point; many people confuse the two, whereas the former is in reality only the introduction to the latter. A student may be well acquainted with all the scientific facts and theories relating to the production and transmission of musical sounds, and yet know nothing of the mode in which these data bear on music itself. Helmholtz, who, with wonderful knowledge and sagacity, appears to have anticipated almost every possible view of the subject, has fully expressed this distinction not only in the substance of his great work, but in its very title-page. He calls it "*Die Lehre von den Tonempfindungen als physiologische Grundlage für die Theorie der Musik*," thereby declaring that the acoustical doctrines he so admirably lays down are not to be considered as forming of themselves a theory of music, but are merely intended to serve as a basis for such a theory. Starting from these data, it becomes necessary to consider the influence they have on the varied and complicated forms and rules which guide the structure of musical composition, as, for example, the construction of the ordinary scale, the nature of chromatic notes, tonality, the combinations and progressions of harmony, the rules of melodial counterpoint, musical form, and so on. A crowd of most interesting questions arise as to how far all these practical matters have been influenced by the physical properties of musical sounds; or how far they are the result of free artistic invention. Helmholtz devotes the second part of his work to the discussion of these and kindred questions, on which, aided by a competent knowledge of music, his great reasoning powers have enabled him to throw much new light. But this part of his labours has been hitherto almost a sealed book to musicians; it is difficult, often elaborate, and sometimes obscure, and the interpreters who have so ably popularised his acoustical researches have stopped short before venturing on what was to physicists a less familiar region. Yet this is by far the most important section of the work, from a musical point of view; it is, in fact, the real "Theory of Music," the true musical philosophy, in which the proper application of science to music is to be found; moreover, unlike abstract acoustics, it touches closely on the practice of the musical art, and the habits of thought of its professors. There are few teachers of musical composition who do not to some extent attempt to found their instruction on natural principles, or what they think to be such; but the theories thus propounded are for the most part crude, vague, and founded on merely empirical fancies, having no philosophical origin, and such as will not stand the test of scientific investigation or strict logical reasoning; and hence we can hardly wonder at the fact that

they rather obstruct than aid the efficiency of musical instruction.

This subject, therefore, the "Application of Scientific Data and Scientific Reasoning to the Theory of Music," is one which offers every inducement for the higher order of musical study, and its discussion is eminently in place in such a society as that before us. The results of the modern investigations are so new, and in many respects so antagonistic to the ideas hitherto prevailing among musicians, that it is not to be expected they will be at once fully understood or favourably received. Already a considerable amount of opposition has been manifested to them; it is reasonable and proper that they should be fairly considered, and it is in the highest degree desirable that they should be clearly explained. The subject has not been neglected at the meetings of the Association, for, although no systematic treatment of it has yet been attempted, we find no less than eight papers on various points of theoretical detail. Four of these are on intonation and temperament (a favourite theme with musical mathematicians, but somewhat unpalatable to practical men, who consider the out-of-tune equal division of the octave "good enough for them"); a fifth aims at exposing the fallacies and inconsistencies of certain of the old theoretical systems; another treats of the philosophical nature of intervals and of the construction of the scale; another expounds some elementary views on harmony; and the eighth exhibits various numerical calculations on musical ratios, &c.

Another point that furnishes a most profitable topic of study is *musical history*. It is impossible to look far into music without becoming aware how largely modern form and structure are derived from what has gone before, and the careful examination of this clears up many points of theory for which no other sufficient explanation can be found. Nothing could be more in place for a "musical association" than historical papers, not as mere matters of antiquarian curiosity, but as bearing on the various changes of musical form. We only, however, find two historical papers, one, an instructive essay, by Sir Frederick Ouseley, on the "History of Ecclesiastical Music in Western Europe," the other an interesting monograph, by Mr. Cummings, on "Purcell."

The *construction of musical instruments* offers a large and varied source of interest, combining the laws of acoustics, the application of mechanical skill and invention, and the adaptation to practical musical use. There are six papers on this, relating to stringed and brass instruments, drums, and the voice.

Finally, there are abundance of topics connected with *the practice of the musical art* which admit of discussion in such a society; for although, in a scientific journal, it is our chief province to point to the subjects in which science takes part, yet it would be a misuse of the society to let these predominate to the prejudice of the more practical matters which come home more directly to professional men, and we consider it a good evidence of the flourishing condition and prospects of the society that these practical points have received so large a share of attention. By far the larger number of the papers have been of this practical kind, relating to musical notations and nomenclature, criticism, practical standards of pitch, the analysis of great musical works, pianoforte playing, the cultivation of sacred music, the connection of music with language, the laws of expression, modes of tuition, and musical libraries. A paper on the last-named subject led to a memorial to the British Museum, and elicited an answer explaining the facilities which that institution affords for musical reference and study.

The Association deserves the support and co-operation of every one interested in the cultivation of music either theoretically or practically, and we cordially wish it the permanent success it seems in a fair way to attain.

W. POLE